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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/897,660	07/02/2001	Kan Frankie Fan	40694/JFO/B600	9837

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Christie Parker & Hale, LLP
P O Box 7068
Pasadena, CA   91109-7068

EXAMINER
CHANG, RICHARD

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 11/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	**Applicant(s)**
Office Action Summary	09/897,660	FAN, KAN FRANKIE
	Examiner	**Art Unit**	
	Richard Chang	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>10/20/2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-37 and 39-70</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>36-37</u> is/are allowed.

6)☒ Claim(s) <u>1-17,30,39-55 and 68</u> is/are rejected.

7)☒ Claim(s) <u>18-29,31-35,56-67,69 and 70</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>02 July 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments and Amendment

1. There was deficiency found in the office action mailed to applicant on

9/20/2006. The finality of rejection of the last office action is withdrawn,

Claim 38 had been canceled.

2. Applicant's arguments, filed 11/01/2006, with respect to claims 1-37 and 39-70

have been fully considered but they are not persuasive.

-- In response to applicant's argument that the cited reference does not disclose

the limitation "grouping flows into first flow lists and each of the first flow lists

corresponding to a selected network link" as recited in independent claim 1 (See

Applicant ' Amendment A, page 6, lines 5-7), the reference clearly discloses that the

traffic balancing operation covers that, assigning (grouping) stream of packets (flows) by

the classifier (260) into first particular flow (first flow lists), each of the first particular flow

(first flow lists) associated to a first packet processor (PP1) corresponding to a source

node and a destination node (a selected network link) (See Fig. 2, Col. 8, lines 38–42),

i.e., it is obvious that the traffic balancing operation at least includes the limitation of

"responsive to the traffic metric, regrouping flows into second flow lists corresponding to

the selected network link, the regrouping balancing the transmission unit traffic among

the network links".

It is the examiner's position that the limitation of "grouping flows into first flow lists and each of the first flow lists corresponding to a selected network link" as cited in claim 1 are clearly anticipated by the cited reference for the reason discussed above.

-- In response to applicant's argument that the cited reference does not disclose the limitation "responsive to the traffic metric, regrouping flows into second flow lists corresponding to the selected network link, the regrouping balancing the transmission unit traffic among the network links" as recited in independent claim 1 (See Applicant ' Amendment A, page 6, 3ʳᵈ paragraph), the reference clearly discloses that the traffic balancing operation covers that, responsive to relative load information (the traffic metric), assigning (regrouping) stream of packets (flows) by the classifier (260) into a second particular flow (second flow lists), associated to a second packet processor (PP2), corresponding to a source node and a destination node (a selected network link), the regrouping dynamically balancing the packet (transmission unit) traffic among the network links (See Fig. 2, Col. 9, lines 31–35), i.e., it is obvious that the traffic balancing operation at least includes the limitation of "responsive to the traffic metric, regrouping flows into second flow lists corresponding to the selected network link, the regrouping balancing the transmission unit traffic among the network links".

-- In response to applicant's argument that the cited reference does not disclose the limitation "balancing transmission unit traffic over heterogeneous speed network links" as recited in independent claims 1 and 39 (See Applicant ' Amendment A, page 6, 3ʳᵈ paragraph), the reference clearly discloses that as the speeds at which networks are capable of transmitting data packets increase, the speeds at which network components

must be able to classify and process data packets must likewise increase (See Fig.,

Col. 3, lines 46-55), i.e., it is obvious that the traffic balancing is adaptive and covers

over heterogeneous speed network links.

It is the examiner's position that the limitation of "balancing transmission unit

traffic over heterogeneous speed network links" as cited in claims 1 and 39 are clearly

anticipated by the cited reference for the reason discussed above.

-- In response to applicant's argument that Karol et al. and Ben Num et al. could

not be combined (See Applicant ' Amendment A, page 10, 1st paragraph), the reference

clearly discloses that Ben Nun et al. teaches a network monitoring and classifying for

balancing transmission unit traffic over network links (See Fig. 2, Col. 3, lines 49– 56)

and Karol et al. teaches a similar application for balancing transmission unit traffic using

gateway processor to maintain flow forwarding, translation and databases (See Col. 6,

lines 30-59), i.e., it is obvious that Karol et al. and Ben Num et al. can be reasonably

combined.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-17,30, 37,39-55 and 68 are rejected under 35 U.S.C. 103(a) as being

unpatentable over US patent No. 6,831,893 ("Ben Nun et al.") in view of US patent

6,628,617 ("Karol et al.").

Regarding Claim 1, Ben Nun et al. teach a network monitoring and classifying

·(NMC 200) apparatus that monitors data packets transmitted on a data network and

processes the data packets by classifying the data packets, associating the classified

data packets with a particular data flow (balancing transmission unit traffic over network

links) (See Fig. 2, Col. 3, lines 49– 56), comprising of

a. disposing packets (transmission units) into a particular stream of packets

(flows) (See Fig. 1, Col. 2, lines 47– 53),

b. assigning (grouping) stream of packets (flows) by the classifier (260) into first

particular flow (first flow lists), each of the first particular flow (first flow lists) associated

to a first packet processor (PP1) corresponding to a source node and a destination

node (a selected network link) (See Fig. 2, Col. 8, lines 38–42),

c. indicating (determining) a relative load information (traffic metric representative

of a traffic load) from the first packet processor (PP1) on the first flow list (the selected

network link) (See Fig. 2, Col. 9, lines 28–31),

d. responsive to relative load information (the traffic metric), assigning

(regrouping) stream of packets (flows) by the classifier (260) into a second particular

flow (second flow lists), associated to a second packet processor (PP2), corresponding

to a source node and a destination node (a selected network link), the regrouping

dynamically balancing the packet (transmission unit) traffic among the network links

(See Fig. 2, Col. 9, lines 31–35), and

    e. outputting (transmitting) the respective second particular flow (second flow

lists) to the particular data processor (230 or 240) over the associated physical access

(210 or 220) respective selected network link (See Fig. 2, Col. 9, lines 35–41).

    Ben Nun et al. teaches substantially all the claimed invention but did not disclose

expressly the particular application involving limitations of

    "separate flow, forwarding and translation databases to perform the above flow

control functions".

    Karol et al. teaches a gateway processor (430) maintaining separate flow (432),

forwarding (433) and translation (434) databases to perform the above flow control

functions (See Fig. 4, Col. 6, lines 30-59).

    A person of ordinary skill in the art would have been motivated to employ Karol et

al. in Ben Nun et al. in order to obtain a network monitoring and classifying apparatus

and to take advantage of maintaining separate flow, forwarding and translation

databases in a gateway processor to perform the above flow control functions in claim

1.

    The suggestion/motivation to do so would have been to maintain separate flow,

forwarding and translation databases in a gateway processor to perform the above flow

control functions, as suggested by Karol et al. in Col. 6, lines 30-59. At the time the

invention was made, therefore, it would have been obvious to one of ordinary skill in the

art to which the invention pertains to combine Karol et al. with the Ben Nun et al. to

obtain the inventions specified in claim 1.

Regarding Claim 36, this claim has limitations that is similar to those of claim 1

and Ben Nun et al. further teach a method of the NMC (200) comprising of

a. inputting and capturing data packets (transmission unit) from the physical

access unit (210 as PHY device) from the transmission link (transmission unit source)

(See Fig. 2, Col. 5, line 66 – Col. 6, line 5),

b. assigning (classifying) stream of packets (the transmission unit) corresponding

to a source node and a destination node (according to a predetermined flow

characteristic),

c. selecting a source and destination path (preselected network link) over which

the stream of packets (transmission unit) is to be transmitted (See Fig. 2, Col. 8, lines

38–42), and

d. outputting (transmitting) transmitting the stream of packets (transmission unit)

over the source and destination path (preselected network link) (See Fig. 2, Col. 9, lines

35–41), thus it is rejected with the same rationale applied against claim 1 above.

Regarding Claim 37, this claim has limitations that is similar to those of claim 36

and Ben Nun et al. further teach that assigning (selecting) the source and destination

path (preselected network link) according to the relative load information (predetermined

flow characteristic) using a dynamically balancing (predetermined dynamic load

balancing) technique (See Fig. 2, Col. 9, lines 28–35), thus it is rejected with the same

rationale applied against claim 36 above.

Regarding claim 39, this claim has limitations that is similar to those of claims 1 and 30 and Ben Nun et al. further teach that the NMC system (200) as a network component includes a header processor (250), and a classifying processor (260) and a plurality of packet processors (PP1 to PPN) for the program execution of all the functions, which inherently include computer readable program codes recorded on a computer readable medium for executing related functional program forming a computer program product (See Fig. 2, Col. 5, lines 51-60), thus it is rejected with the same rationale applied against claims 1 and 30 above .

Regarding claims 17 and 55, these claims have limitations that is similar to those of claims 1 and 39 and Ben Nun et al. further teach that for the NMC system (200), the physical access unit (210) and the physical access unit (220) are independent and may connect but not limited to all different nodes to form independent link between nodes to be transmitted over heterogeneous speed network links (See Fig. 2, Col. 6, lines 12-24), thus it is rejected with the same rationale applied against claims 1 and 39 above.

Regarding claim 30, this claim has limitations that is similar to those of claim 1 and Ben Nun et al. further teach that for the NMC system (200) as discussed above further comprising:

a. the headers of the packets (transmission units) contains the information of the source node and the destination node of the network as part of the predetermined rules for assigning (disposing) the first particular flow (first flow lists) (See Fig. 2, Col. 7, lines 37-42),

b. the data packets in the first particular flow (first flow lists) are sorted based on

the source IP address or destination IP address (See Fig. 3, Col. 6, lines 36-45),

(c. and d. follow the same rationale as discussed above), and

e. the data path unit (230) may perform Internet Protocol (IP) (using a

predetermined link-layer transmission protocol) to communicate the packets

(transmission unit) over the network links (flow lists) in cooperation with a IP (network-

layer protocol) and transport control protocol (TCP) following the TCP/IP standard,

inherently wherein each of the IP (network-layer protocol) and the TCP (transport-layer

protocol) is one of a connectionless protocol and a connection-based protocol (See Fig.

3, Col. 6, lines 27-32), thus it is rejected with the same rationale applied against claim 1

above.

Regarding claims 31-32, these claims have limitations that is similar to those of

claim 30 and Ben Nun et al. further teach that the network includes implementation of

local area network (LAN), inherently, the predetermined link-layer transmission protocol

is one of an IEEE STD. 802 protocol (See Fig. 2, Col. 1, lines 19-20), thus it is rejected

with the same rationale applied against claim 30 above.

Regarding claims 2 and 40, these claims have limitations that is similar to those

of claims 1 and 39 and Ben Nun et al. further teach that each of the transmission units

is data packet (See Col. 8, lines 48-50), thus it is rejected with the same rationale

applied against claims 1 and 39 above.

Regarding claims 3 and 41, these claims have limitations that is similar to those

of claims 1 and 39 and Ben Nun et al. further teach that each of the packet

(transmission units) includes one of source address (information), destination address (information), and a combination thereof, and the flow is classified according to one of the predetermined rules (disposing comprises characterizing) that a packet having a source address (information), destination address (information) and a combination thereof (See Col. 8, lines 15-18), thus it is rejected with the same rationale applied against claims 1 and 39 above.

Regarding claims 4-6 and 42-44, these claims have limitations that is similar to those of claims 1 and 39 and Ben Nun et al. further teach that for the local area network application, inherently, the predetermined link-layer transmission protocol is an IEEE STD. 802 protocol, a packet-based protocol (See Col. 1, lines 20-25), thus it is rejected with the same rationale applied against claims 1 and 39 above.

Regarding claims 7 and 45, Ben Nun et al. further teach that each of the transmission units is data packet based on IP (network layer) over IEEE STD. 802 protocol LAN (link-layer transmission protocol) (See Col. 6, lines 30-32), thus it is rejected with the same rationale applied against claims 1 and 39 above.

Regarding claims 8 and 46, these claims have limitations that is similar to those of claims 1 and 39 and Ben Nun et al. further teach that each of the transmission units is data packet based on TCP (transport layer) /IP (network layer) over IEEE STD. 802 protocol LAN (link-layer transmission protocol) (See Col. 6, lines 28-30), thus it is rejected with the same rationale applied against claims 1 and 39 above.

Regarding claims 9-16 and 47-54, these claims have limitations that is similar to those of claims 1 and 39 and Ben Nun et al. further teach the network-layer protocol is a

connectionless protocol, and the connectionless protocol is an internet protocol (IP) and

the transport-layer protocol is a connection-based protocol, and the connection-based

protocol is a transmission control protocol (TCP) (See Col. 12, line 65 - Col. 13, line 4),

thus it is rejected with the same rationale applied against claims 1 and 39 above.

Regarding claims 68, these claims have limitations that is similar to those of

claims 1 and 30 and Ben Nun et al. further teach that the NMC (200 as a network load

balancer in a communication network having network links) comprising of:

a. a header processor (250, flow synthesizer) that receives packets (transmission

units) from a data path (230 transmission unit source), and classifies the data packets

by determining which rule or rules of a predetermined set of rules correspond to each of

the headers HDR (synthesizes flows characteristic of selected transmission units))

(See Fig. 2, Col. 7, lines 9-12), and

b. a classifier (260 link classifier), coupled with the header processor (250, flow

synthesizer) and the network links, that classifies the network links according to one of

the predetermined rules (relative to a predetermined flow metric), and determines

(assigns) selected flows to selected network links predetermined rules (responsive to a

predetermined flow metric), the selected packets (transmission units) corresponding to

the selected flows being communicated with the communication network through a

specific flow (the respective selected network links) (See Fig. 2, Col. 7, lines 37-39),

thus it is rejected with the same rationale applied against claims 1 and 39 above.

Allowable Subject Matter

5. Claims 36-37 are allowed.

6. Claims 18-29, 31-35, 56-67 and 69-70 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if no art rejection can be applied.

Reason for indicating Allowable Subject Matter

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art along or in combination fails to teach or make obvious the following limitations:

"monitoring the operation of a plurality of preselected network links, and re-assigning the predetermined flow characteristic from a first preselected network link to a second preselected network link, if the first preselected network link operationally fails" as recited in the *independent claim 36.*

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Chang whose telephone number is (571) 272-3129. The examiner can normally be reached on Monday - Friday from 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

rkc

Richard Chang
Patent Examiner
Art Unit 2616

RICKY Q. NGO
SUPERVISORY PATENT EXAMINER